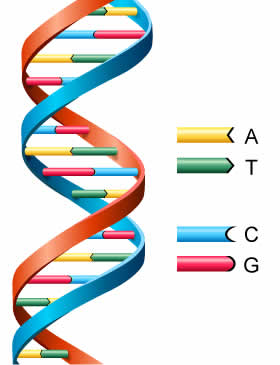
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**QUARTERLY 3**

**STUDY GUIDE**



1. This type of RNA transfers the amino acids to the growing protein chain.

2. This type of RNA carries the message from DNA for the making of proteins.

3. The set of 3 consecutive nitrogen bases found on the mRNA is the \_\_\_\_\_.

4. The enzyme that binds to DNA during transcription is \_\_\_\_\_.

5. \_\_\_\_ is the process where a piece of DNA is copied into mRNA.

6. The process where the mRNA is “decoded” into protein is called \_\_\_\_.

7. Translation takes place in the \_\_\_\_ of a cell.

8. When one part of a chromosome is left out, this is called a \_\_\_.

9. When part of a chromosome breaks off and is reattached backwards this is a \_\_\_ mutation.

10. Any mistake or change in DNA is a \_\_\_\_\_.

11. When a piece of a chromosome breaks off during crossing over and attaches to a non-homologous chromosome this is a(n) \_\_\_\_\_.

12. As a cell’s surface area increases its volume increases \_\_\_\_\_\_\_.

13. During the process of cytokinesis, a cell’s:

14. You know you are observing plant cells undergoing mitosis if you observe \_\_\_.

15. During which phase of mitosis do the chromosomes line up along the middle of the dividing cell?

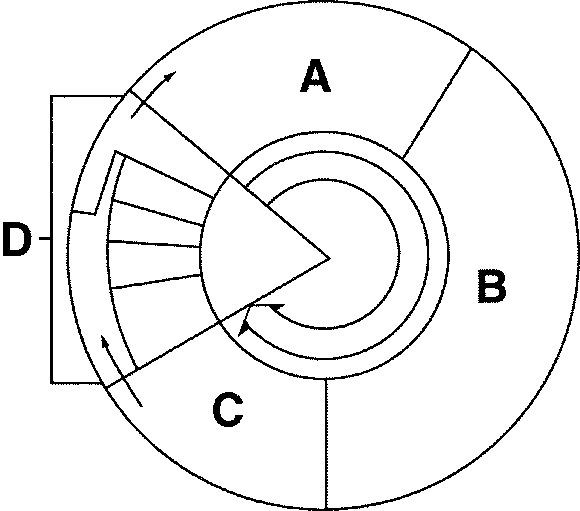
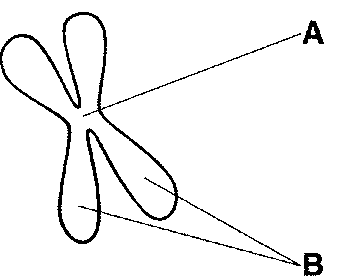
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Figure 1: A is the G1 phase, B is the S phase, C is G2 phase and D is Mphase

**Figure 10–1**

16. Mitosis is represented in Figure 10–1 by the letter \_\_\_\_.

****

**Figure 10–2**

17. The structure labeled A in Figure 10–2 is called the \_\_\_\_\_.

18. The structures labeled B in Figure 10-2 are called the \_\_\_.

19. Crossing over occurs during \_\_\_.

20. How many chromosomes will be in the body cell of an organism if there are 20 chromosomes in the organism’s egg?

21. What happens between mieosis I and meiosis II that reduces the amount of chromosomes?

22. Unlike mitosis, meoisis results in the formation of \_\_\_ cells.

23. The number of chromosomes present in gametes is represented by the letter \_\_\_\_\_.

24. The set of 3 consecutive nitrogen bases found on the mRNA is the \_\_\_\_\_.

25. Unlike mitosis, meiosis results in \_\_\_\_\_\_ genetically \_\_\_\_\_\_ cells.

26. The longest phase of the **cell cycle** is \_\_\_\_.

27. The Watson and Crick model of DNA is a(an) \_\_\_\_\_, in which two strands are wound around each other.

28. During DNA replication, what must be “unzipped”?

29. During what phase of mitosis does the nuclear envelope disappear?

30. What molecule does the “unzipping” during DNA replication?

31. The part of the experiment in which all conditions are kept the same (do not vary) are called

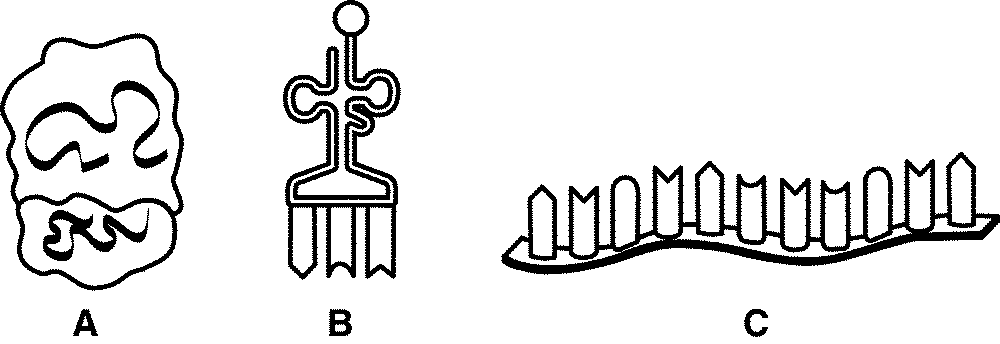
32. Identify the correct order of steps in the scientific method listed below.

33. The regulation of an organism’s internal environment to maintain conditions suitable for life is the definition of \_\_\_\_.

34. The process by which molecules move from an area of **higher** concentration **to** an area of **lower** concentration is the definition of \_\_\_.

35. Photosynthesis takes place in the \_\_\_\_.

**Use Figure 12-3 to answer question 36-40 below.**



**Figure 12-3**

36. What type of RNA is molecule B in Figure 12-3?

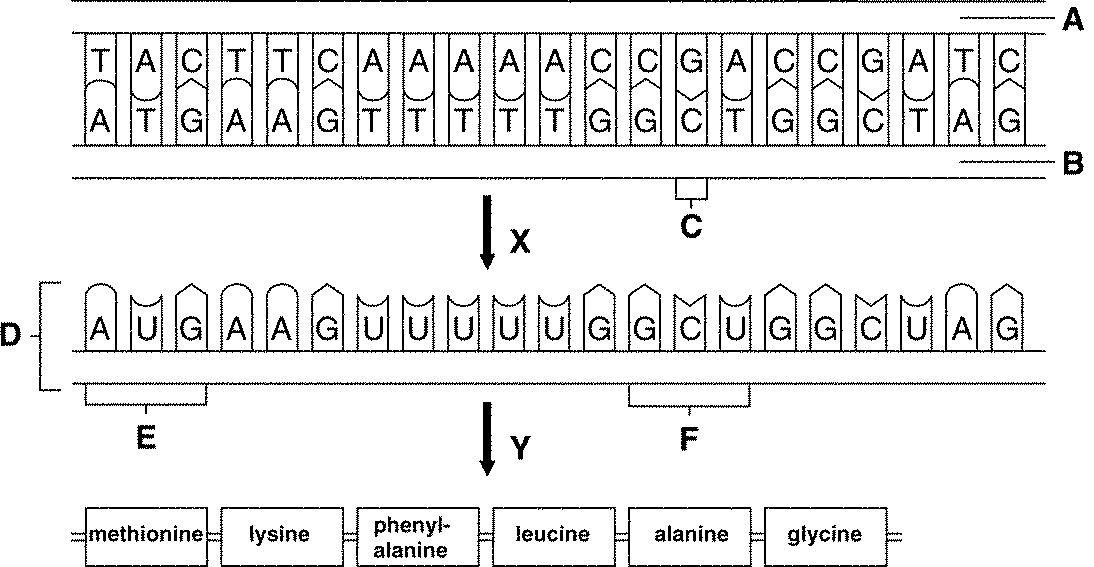
37. What is type of RNA is molecule C in Figure 12-3?

38. Which molecule above is responsible for carrying the code from DNA?

39. What molecule above is responsible for bringing the amino acid to the growing protein?

40. What type of RNA is molecule A in Figure 12-3?

***Use Figure 12-4 below to answer the questions 41 -45***



**FIGURE 12-4**

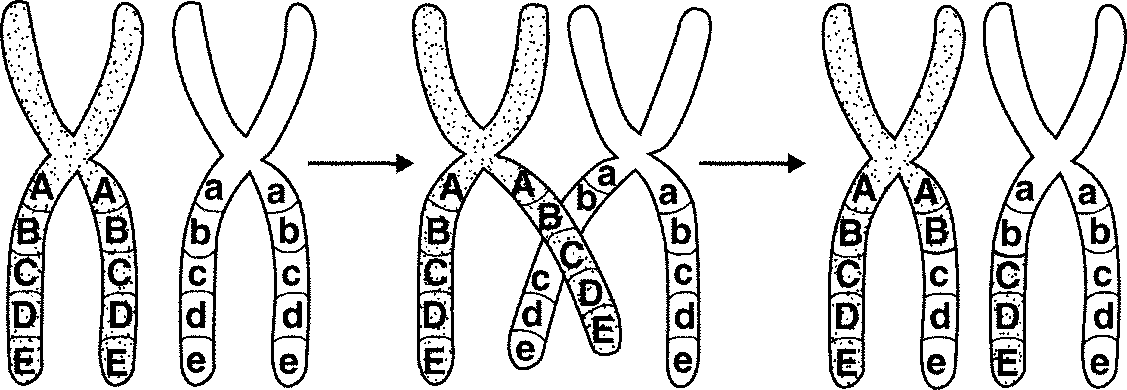
41. What is structure A&B in Figure 12–4?

42. What structure F in Figure 12–4?

43. What is structure E in Figure 12–4?

44. What would happen to structure F in Figure 12–4 if structure C were deleted?

45. What process does structure X represent in Figure 12-4?

****

**Figure 11–3**

47.What process is being shown in Fig. 11-3 (HINT: look at the letters).

48. During what phase of meiosis does the process in figure 11-3 occur?

49. What is the purpose of the process being shown in fig. 11-3.

50. The process shown in Fig. 11-3 takes place in what type of cells?

51. The process shown in Fig. 11-3 takes place between what type of chromosomes.